



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/788,850

02/27/2004

Vincent J. Gatto

AN-7421

6851

7982 7590 04/16/2008

ALBEMARLE CORPORATION  
PATENT DEPARTMENT  
451 FLORIDA BLVD.  
BATON ROUGE, LA 70801

EXAMINER

OH, TAYLOR V

ART UNIT

PAPER NUMBER

1625

MAIL DATE

DELIVERY MODE

04/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,850	<b>Applicant(s)</b> GATTO ET AL.	
	<b>Examiner</b> Taylor Victor Oh	<b>Art Unit</b> 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-28 and 30-69 is/are pending in the application.
- 4a) Of the above claim(s) 50-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-28,30-49 and 69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/12/08 has been entered.

The Status of Claims :

Claims 1,4-28,30-69 are pending.

Claims 1,4-28,30-49 and 69 are rejected.

Claims 50-68 are withdrawn from consideration.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1625

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1,4-28,30-49 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeberli et al (U.S. 4,228,297) in view of Grant et al (Chemical Dictionary, 1990, p. 11-12).

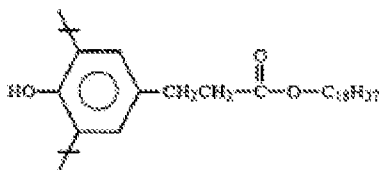
Haeberli et al discloses a process of producing hydroxyalkylphenyl derivative by adding methyl acrylate in the presence of an alkaline catalyst to the alkyl substituted phenolic compound, and adding to the resultant reaction mixture a suitable alcohol in the presence of a second catalyst and further its process has been exemplified as below (see col. 10 ,lines 29-62):

Art Unit: 1625

To a 500 ml, 3-necked flask, equipped with a stirrer, a reflux condenser, a calibrated dropping funnel, a thermometer and a nitrogen inlet were charged 103 g of 2,6-di-*t*-butylphenol. The phenol was heated to 70° C., and the system was purged carefully with nitrogen. Then 1.4 g of potassium *t*-butoxide were added, followed by 2 ml of isopropyl alcohol. The resultant mixture was heated to 107° C. to 110° C., whereupon 47.3 g of methyl acrylate were added at a uniform rate over a two hour period while maintaining the specified temperature range. The mixture was held for three hours at the specified temperature range. Then vacuum was applied to strip excess methyl acrylate. The vacuum was released with nitrogen, the mixture was cooled to 70° C. and 24.4 g of thiodiglycol were added, followed by 0.47 g of lithium hydroxide monohydrate. Vacuum was applied and the pressure was reduced to 20 mm Hg. The reaction mixture was then gradually heated to 140° to 145° C. in two hours and held at that temperature for three hours. The vacuum was then released with nitrogen, and the reaction mass was cooled to 70° C. and acidified with 3.0 g of glacial acetic acid. 132 g of ethyl alcohol were added to the melt, and the resultant solution was clarified. The filtrate was cooled to 28° C. and seeded with 0.5 g of thio-bis-{ethylene-3-(3,5-di-*t*-butyl-4-hydroxyphenyl)propionate}.

The reaction product crystallized and the resulting slurry was cooled to 16° C. The product was isolated on a Buchner funnel, washed with cold ethyl alcohol, sucked dry and dried in a vacuum oven at 50° C. to a constant weight. 97.0 g of dry thio-bis-{ethylene-3-(3,5-di-*t*-butyl-4-hydroxyphenyl)propionate} were obtained; m.p. 71.5° C.; yield 75.4%, based on the thiodiglycol employed.

EXAMPLE 3



The procedure described in Example 1 was followed using, however, 126 g of n-octadecyl alcohol in place of thiodiglycol and crystallizing the reaction product from 750 g of 90% isopropyl alcohol. 218 g of dry n-octadecyl- $\beta$ -(3,5-di-*t*-butyl-4-hydroxyphenyl)propionate were obtained; m.p. 53.0° C.; yield 87% based on the n-octadecyl alcohol employed.

(see col. 11, example 3 , lines 20-31).

The second alkaline catalyst may be selected from the classes of compounds listed above for the first alkaline catalyst, i.e., alkali metal hydrides, alkali metal alkoxides of Formula VI or alkali metal amides of Formula VII. In addition, alkali metal hydroxides may be employed, such as lithium hydroxide. Preferred second alkaline catalysts are lithium amide and lithium hydroxide.

(see col. 9 ,lines 1-8).

Furthermore, the overall molar ratio of methyl acrylate and the phenol compound should be at least 1:1, preferably a slightly excess of about 5 to 30 moles percent of methyl acrylate is used (see col. 8 ,lines 43-47).

However, the instant invention differs from the Haeberli et al in that the claimed process uses the phosphoric acid in the neutralization step instead of acetic acid; the precipitated phosphate salt is unspecified.

Regarding the precipitated salt, the formation of the prior art expressly discloses the following passages (see col. 10, lines 47-52):

Art Unit: 1625

three hours. The vacuum was then released with nitrogen, and the reaction mass was cooled to 70° C. and acidified with 3.0 g of glacial acetic acid. 132 g of ethyl alcohol were added to the melt, and the resultant solution was clarified. The filtrate was cooled to 28° C. and

From this passage, it shows that, after the reaction mixture being acidified with acetic acid, the terms “the filtrate” is employed to describe the clear liquid that passed through a filter; this means that the precipitated salt of the catalyst can be removed by the filter; in other words, during the neutralization process in the prior art, it implies that glacial acetic acid does form a precipitated salt just like the claimed process.

Therefore, the prior art process is still relevant to the claimed invention.

With respect to the use of the phosphoric acid in the claimed process, the prior art is silent. However, with respect to the role of the acid in the neutralization step, the acetic acid has the same function as the phosphoric acid in the claimed process; regardless of the type of the acid to be used, the only role of the acid is to neutralize the base in the process. Furthermore, the phosphoric acid is one of the well-known acids in the art as shown in Grant et al (Chemical Dictionary, 1990, p. 11-12).

Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use the phosphoric acid as an alternative to acetic acid for the neutralization step in the prior art process. This is because the skilled artisan in the art would expect such a modification to be feasible and successful as shown in the prior art.

### **Applicants' Argument**

Regarding to applicants arguments, the examiner has decided to defer its response after the present office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Taylor Victor Oh, MSD,LAC  
Primary Examiner  
Art Unit : 1625

/Taylor Victor Oh/  
Primary Examiner, Art Unit 1625  
4/13/08